

wherein a magnet system and an electric coil system belong to the first linear motor, while the second linear motor comprises a stationary part and a movable part which is displaceable parallel to the first direction over a guide of the stationary part, the magnet system of the first linear motor being connected to the mask stage and the electric coil system of the first linear motor being connected to the movable part of the second linear motor so as to move with the movable part of the second linear motor.--

REMARKS

Claims 28-33 are pending. By this Amendment, claims 29 and 31 are amended, and claims 32 and 33 are added. Claims 29 and 31 have been rewritten in independent form.

Claims 32 and 33 are identical to claims 30 and 31 except that: (i) the preambles of claims 32 and 33 recite that the elements are "arranged", rather than "supported", and (ii) the last clause of claim 33 uses the word "connected" rather than "fastened," and recites that "the electric coil system of the first linear motor being connected to the movable part of the second linear motor so as to move with the movable part of the second linear motor."

The attached Appendix includes a marked-up copy of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Applicant thanks Examiner Kim for the courtesies extended to Applicant's undersigned attorney at the March 12 interview. The substance of the interview is set forth in the following remarks.

I. Claims 28 and 30 are Patentable

Claims 28 and 30 stand rejected under 35 U.S.C. §102(e) over U.S. Patent No. 5,477,304 to Nishi. This rejection is respectfully traversed.

In rejecting these claims, the Office Action asserts that actuators 38, 40, 42 of Nishi correspond to the claimed "first linear motor." Independent claims 28 and 30 are substantial copies of claim 1 of U.S. Patent No. 5,767,948 to Loopstra et al. (the 948 patent). The corresponding European patent of the 948 patent (i.e., EP 0 772 800 B1) has been opposed,

and the opponent has asserted that claim 1 of the European patent, which is substantially identical to 948 patent claim 1, is not patentable over the Japanese counterpart of the Nishi 304 patent (which is identical in all pertinent parts to the Nishi 304 patent). In response, the patentee argued that the Nishi actuators 38, 40, 42 are not linear motors. See, e.g., paragraphs 8 and 13 of the patentee's comments on the Opposition, a copy of which is enclosed for the Examiner's information. It is argued that Nishi expressly distinguishes between linear motors (associated with the "relative scanning drive apparatus 24") and actuators 38, 40, 42 (associated with the "fine adjustment control drive apparatus 25"). Applicant submits that claims 28 and 30 should be allowed for at least these reasons.

II. Claims 29 and 31 are Patentable

Claims 29 and 31 stand rejected under 35 U.S.C. §112, first paragraph. This rejection is respectfully traversed.

In rejecting claims 29 and 31, the Office Action states:

According to the claims, the magnet system of the first linear motor is fastened to the mask stage. The term, "mask stage" is not defined in the specification. In fact, the term, "mask stage" is missing from the specification. Also, the electric coil system of the first linear motor fastened to the movable part of the second linear motor is not disclosed in the specification, since in Figure [sic] 5 and 7, the electric coil of the first linear motor seems to be attached to the coarse stage, which is not claimed.

Although the words "mask stage" do not appear in the specification, one having ordinary skill in the art would have readily understood that the "reticle stage" described in the specification is a mask stage. Fig. 5, for example, shows a reticle stage. See, for example, page 20, line 26 of the specification. Applicant respectfully submits that one having ordinary skill in the art would have readily understood that a reticle stage is a mask stage. That is, the reticle stage is the stage that holds the object which contains the pattern that is being transferred to a substrate by the lithographic device. Moreover, the present specification equates the word "reticle" with the word "photomask." See, for example, page 1, line 18. In addition, the

Summary of the Invention describes that the stage unit scans a mask. See, for example, page 2, lines 20-25.

Accordingly, Applicant respectfully submits that one having ordinary skill in the art would have readily understood that the present specification describes a mask stage. It is not necessary for a specification to provide *in haec verba* support in the specification for the words used in the claims. See In re Wright, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163, section I.B., second paragraph. In the present case, Applicant respectfully submits that the specification actually equates the word "reticle" with the word "photomask" and therefore does in effect provide *in haec verba* support for the claimed "mask stage." At the interview, it was agreed that at least this aspect of the rejection will be withdrawn.

Applicant also respectfully submits that the feature of the electric coil system of the first linear motor fastened to the movable part of the second linear motor is described in the specification. In particular, the electric coils 38A, 38B, 41A, 41B of the first linear motors 39A, 39B, 42A, 42B (which move the mask stage 8 in the X, Y and θ Z directions) are fixed to scanning stage 9, as are the movable parts 32A, 32B of the second linear motors 31A, 31B, which ultimately drive the mask stage over larger distances in the scanning (Y) direction.

Thus, the electric coils 38A, 38B, 41A, 41B are fastened to the movable parts 32A, 32B via the scanning stage 9, and all of these elements (the coils 38A,..., the movable parts 32A, ... and the scanning stage 9) move together as one unit. See, for example, page 21, lines 1-5, page 21, lines 13-16, page 23, lines 10-24 and page 24, lines 18-25. This is similar to the arrangement of the 948 patent, in which the coil holder 81 of the coils 85, 87, 89, 91 of the fine adjustment linear motor is fastened to a "connection arm 79" of the second linear motor "movable part 77" distant from the location where the movable part 77 interacts with the stationary part 73 of the second motor. See, e.g., 948 patent Fig. 5 and col. 8, lines 38-47.

The claims do not require that the electric coils of the first linear motor be directly fastened to the coils or magnets of the second linear motor.

Accordingly, claims 29 and 31 satisfy all requirements of 35 U.S.C. §112. As no rejection has been made against claims 29 and 31 in view of any references, it is believed that claims 29 and 31 are in condition for allowance.

Applicant further submits that new independent claim 33, which recites that "the electric coil system of the first linear motor being connected to the movable part of the second linear motor so as to move with the movable part of the second linear motor" also is clearly supported by the specification, and in condition for allowance.

III. The Interference Should be Declared

Applicant repeats its request that an interference be declared between the present application and U.S. Patent No. 5,767,948 to Loopstra et al. The interference should be declared because at least some claims (i.e., at least claims 29, 31 and 33) are not rejected in view of any references, and therefore should be allowed. See, e.g., 37 C.F.R. §1.606 and MPEP §2306. Furthermore, for at least the reasons set forth above, Applicant submits that claims 28, 30 and 32 also should be allowed. The Examiner is requested to suspend *ex parte* prosecution of the present application, either pursuant to 37 C.F.R. §1.103(e), so that the application can be reviewed by the Examiner for declaration of an interference, or pursuant the 37 C.F.R. §1.615(a) upon immediate declaration of an interference.

If the Examiner withdraws all rejections, then applicant proposes that the Count should be applicant's claim 32, or as an alternative, the count should be (applicant's claim 32 or claim 30 or 948 patent claim 1).

If the Examiner maintains the rejection of claims 28 and 30 based on Nishi, then Applicant proposes that the count should be applicant's claim 33, or as alternative, the count should be (applicant's claim 33 or claim 31 or 948 patent claim 14).

Applicant submits that claims 28-33 of this application should be designated to correspond to the proposed count. Applicant submits that all claims (i.e., claims 1-18) of the 948 patent should be designated to correspond to the proposed count. Claims 1 and 14 of the 948 patent are substantially identical to the count, whereas claims 2-13 and 15-18 of the 948 patent are unpatentable over the count, and therefore should be designated to correspond to the count.

In particular, Applicant submits that claims 2, 3 and 7 of the 948 patent are unpatentable under 35 U.S.C. §103(a) over the count in view of U.S. Patent No. 5,874,820 to Lee. In addition, Applicant submits that 948 patent claims 4-6, 8-13 and 15-18 are unpatentable under 35 U.S.C. §103(a) over the count in view of U.S. Patent No. 4,821,205 to Schutten. Copies of the Lee and Schutten patents are submitted with the enclosed Information Disclosure Statement.

IV. Applicant is entitled to the benefit of the filing date of its foreign priority application

Applicant submits herewith an accurate translation of Japanese Patent Application

No. 1994/268546, which is one of the priority documents for the present application.

Applicant submits that Japanese Application No. 1994/268546 supports claims 28-33 of the present application, and therefore Applicant is entitled to the benefit of the November 1, 1994 filing date of the Japanese priority application. The following claim chart demonstrates support in the Japanese priority document for the features recited in claims 28-33.

<u>Claim 28</u>	Description in Translation of Japanese Application No. 268546/1994
28. A lithographic device comprising the following elements which are supported in that order:	Fig. 4; page 3, lines 6-10, page 10, lines 18-20, page 11, lines 1-8, page 15, lines 17-21
a substrate stage which can be positioned by a first positioning device parallel to a Y-direction which is perpendicular to a vertical Z-direction and an X-direction which is perpendicular to the Y-direction and to the Z-direction;	Fig. 4; items 19-22, 25-27; page 6, lines 14-20
an imaging system with a main axis directed parallel to the Z-direction;	Fig. 4; item 14; page 5, lines 12-22
a mask stage which can be positioned parallel to the Y-direction by a second positioning device; and	Figs. 1-4; items 8, 9, 31A, 31B, 39A, 39B, 42A, 42B are parts of a mask stage; page 3, line 17, page 11, lines 4-5, page 11, lines 11-25, page 16, lines 1-5, page 16, lines 14-17
an illumination optical system which irradiates an exposure illumination light beam;	Fig. 4; items 1-5; page 4, line 21 - page 5, line 10, page 16, lines 20-24
wherein the mask stage is also positionable parallel to the X-direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device; and	Page 11, lines 11-25, page 16, lines 14-17, page 20, line 16 - page 21, line 4
wherein the second positioning device is provided with a first linear motor by means of which the mask stage can be positioned over comparatively small movement parallel to the Y-direction and X-direction and can be rotated about the axis of rotation of the mask stage and a second linear motor by means of which the mask stage can be positioned over comparatively great movement parallel to the Y-direction.	Items 39A, 39B, 42A, 42B are parts of first linear motor; Items 31A, 31B are parts of second linear motor; Page 16, lines 1-5, page 16, lines 14-17, page 16, line 24 - page 17, line 3

Claim 29	<u>Description in Translation of Japanese</u> <u>Application No. 268546/1994</u>
29. A lithographic device comprising the following elements which are supported in that order:	Fig. 4; page 3, lines 6-10, page 10, lines 18-20, page 11, lines 1-8, page 15, lines 17-21

Claim 29	Description in Translation of Japanese Application No. 268546/1994
a substrate stage which can be positioned by a first positioning device parallel to a Y-direction which is perpendicular to a vertical Z-direction and an X-direction which is perpendicular to the Y-direction and to the Z-direction;	Fig. 4; items 19-22, 25-27; page 6, lines 14-20
an imaging system with a main axis directed parallel to the Z-direction;	Fig. 4; item 14; page 5, lines 12-22
a mask stage which can be positioned parallel to the Y-direction by a second positioning device; and	Figs. 1-4; items 8, 9, 31A, 31B, 39A, 39B, 42A, 42B are parts of a mask stage; page 3, line 17, page 11, lines 4-5, page 11, lines 11-25, page 16, lines 1-5, page 16, lines 14-17
an illumination optical system which irradiates an exposure illumination light beam;	Fig. 4; items 1-5; page 4, line 21 - page 5, line 10, page 16, lines 20-24
wherein the mask stage is also positionable parallel to the X-direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device;	Page 11, lines 11-25, page 16, lines 14-17, page 20, line 16 - page 21, line 4
wherein the second positioning device is provided with a first linear motor by means of which the mask stage can be positioned over comparatively small movement parallel to the Y-direction and X-direction and can be rotated about the axis of rotation of the mask stage and a second linear motor by means of which the mask stage can be positioned over comparatively great movement parallel to the Y-direction; and	Items 39A, 39B, 42A, 42B are parts of first linear motor; Items 31A, 31B are parts of second linear motor; Page 16, lines 1-5, page 16, lines 14-17, page 16, line 24 - page 17, line 3

<u>Claim 29</u>	<u>Description in Translation of Japanese</u> <u>Application No. 268546/1994</u>
wherein a magnet system and an electric coil system belong to the first linear motor, while the second linear motor comprises a stationary part and a movable part which is displaceable parallel to the Y-direction over a guide of the stationary part, the magnet system of the first linear motor being fastened to the mask stage and the electric coil system of the first linear motor being fastened to the movable part of the second linear motor.	Items 37A, 37B, 40A, 40B are magnets of first linear motor, and are fixed to fine adjustment stage 8; Items 38A, 38B, 41A, 41B are coils of first linear motor, and are fixed to scanning stage 9 to which movable parts 32A, 32B of second linear motor 31A, 31B are fixed; Second linear motor 31A, 31B has movable parts 32A, 32B and stationary parts 33A, 33B; Page 8, lines 7-17, page 15, lines 3-5, page 18, lines 15-25, page 19, lines 4-7, page 19, lines 9-15, page 19, line 20 - page 20, line 9, page 23, lines 16-25

Claim 30	Description in Translation of Japanese Application No. 268546/1994
30. A lithographic device comprising the following elements which are supported in that order:	Fig. 4; page 3, lines 6-10, page 10, lines 18-20, page 11, lines 1-8, page 15, lines 17-21
a substrate stage which can be positioned by a first positioning device parallel to a first direction which is perpendicular to a vertical Z-direction and a second direction which is perpendicular to the first direction and to the Z-direction;	Fig. 4; items 19-22, 25-27; page 6, lines 14-20
an imaging system with a main axis directed parallel to the Z-direction;	Fig. 4; item 14; page 5, lines 12-22
a mask stage which can be positioned parallel to the first direction by a second positioning device; and	Figs. 1-4; items 8, 9, 31A, 31B, 39A, 39B, 42A, 42B are parts of a mask stage; page 3, line 17, page 11, lines 4-5, page 11, lines 11-25, page 16, lines 1-5, page 16, lines 14-17
an illumination optical system which irradiates an exposure illumination light beam;	Fig. 4; items 1-5; page 4, line 21 - page 5, line 10, page 16, lines 20-24

Claim 30	Description in Translation of Japanese Application No. 268546/1994
wherein the mask stage is also positionable parallel to the second direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device; and	Page 11, lines 11-25, page 16, lines 14-17, page 20, line 16 - page 21, line 4
wherein the second positioning device is provided with a first linear motor by means of which the mask stage can be positioned over comparatively small movement parallel to the first direction and the second direction and can be rotated about the axis of rotation of the mask stage and a second linear motor by means of which the mask stage can be positioned over comparatively great movement parallel to the first direction.	Items 39A, 39B, 42A, 42B are parts of first linear motor; Items 31A, 31B are parts of second linear motor; Page 16, lines 1-5, page 16, lines 14-17, page 16, line 24 - page 17, line 3

<u>Claim 31</u>	Description in Translation of Japanese Application No. 268546/1994
31. A lithographic device comprising the following elements which are supported in that order:	Fig. 4; page 3, lines 6-10, page 10, lines 18-20, page 11, lines 1-8, page 15, lines 17-21
a substrate stage which can be positioned by a first positioning device parallel to a first direction which is perpendicular to a vertical Z-direction and a second direction which is perpendicular to the first direction and to the Z-direction;	Fig. 4; items 19-22, 25-27; page 6, lines 14-20
an imaging system with a main axis directed parallel to the Z-direction;	Fig. 4; item 14; page 5, lines 12-22
a mask stage which can be positioned parallel to the first direction by a second positioning device; and	Figs. 1-4; items 8, 9, 31A, 31B, 39A, 39B, 42A, 42B are parts of a mask stage; page 3, line 17, page 11, lines 4-5, page 11, lines 11-25, page 16, lines 1-5, page 16, lines 14-17
an illumination optical system which irradiates an exposure illumination light beam;	Fig. 4; items 1-5; page 4, line 21 - page 5, line 10, page 16, lines 20-24

<u>Claim 31</u>	Description in Translation of Japanese Application No. 268546/1994
wherein the mask stage is also positionable parallel to the second direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device;	Page 11, lines 11-25, page 16, lines 14-17, page 20, line 16 - page 21, line 4
wherein the second positioning device is provided with a first linear motor by means of which the mask stage can be positioned over comparatively small movement parallel to the first direction and the second direction and can be rotated about the axis of rotation of the mask stage and a second linear motor by means of which the mask stage can be positioned over comparatively great movement parallel to the first direction; and	Items 39A, 39B, 42A, 42B are parts of first linear motor; Items 31A, 31B are parts of second linear motor; Page 16, lines 1-5, page 16, lines 14-17, page 16, line 24 - page 17, line 3
wherein a magnet system and an electric coil system belong to the first linear motor, while the second linear motor comprises a stationary part and a movable part which is displaceable parallel to the first direction over a guide of the stationary part, the magnet system of the first linear motor being fastened to the mask stage and the electric coil system of the first linear motor being fastened to the movable part of the second linear motor.	Items 37A, 37B, 40A, 40B are magnets of first linear motor, and are fixed to fine adjustment stage 8; Items 38A, 38B, 41A, 41B are coils of first linear motor, and are fixed to scanning stage 9 to which movable parts 32A, 32B of second linear motor 31A, 31B are fixed; Second linear motor 31A, 31B has movable parts 32A, 32B and stationary parts 33A, 33B; Page 8, lines 7-17, page 15, lines 3-5, page 18, lines 15-25, page 19, lines 4-7, page 19, lines 9-15, page 19, line 20 - page 20, line 9, page 23, lines 16-25

Claim 32	<u>Description in Translation of Japanese</u> <u>Application No. 268546/1994</u>
32. A lithographic device comprising the following elements which are arranged in that order:	Fig. 4; page 3, lines 6-10, page 10, lines 18-20, page 11, lines 1-8, page 15, lines 17-21
a substrate stage which can be positioned by a first positioning device parallel to a first direction which is perpendicular to a vertical Z-direction and a second direction which is perpendicular to the first direction and to the Z-direction;	Fig. 4; items 19-22, 25-27; page 6, lines 14-20

Claim 32	<u>Description in Translation of Japanese</u> <u>Application No. 268546/1994</u>
an imaging system with a main axis directed parallel to the Z-direction;	Fig. 4; item 14; page 5, lines 12-22
a mask stage which can be positioned parallel to the first direction by a second positioning device; and	Figs. 1-4; items 8, 9, 31A, 31B, 39A, 39B, 42A, 42B are parts of a mask stage; page 3, line 17, page 11, lines 4-5, page 11, lines 11-25, page 16, lines 1-5, page 16, lines 14-17
an illumination optical system which irradiates an exposure illumination light beam;	Fig. 4; items 1-5; page 4, line 21 - page 5, line 10, page 16, lines 20-24
wherein the mask stage is also positionable parallel to the second direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device; and	Page 11, lines 11-25, page 16, lines 14-17, page 20, line 16 - page 21, line 4
wherein the second positioning device is provided with a first linear motor by means of which the mask stage can be positioned over comparatively small movement parallel to the first direction and the second direction and can be rotated about the axis of rotation of the mask stage and a second linear motor by means of which the mask stage can be positioned over comparatively great movement parallel to the first direction.	Items 39A, 39B, 42A, 42B are parts of first linear motor; Items 31A, 31B are parts of second linear motor; Page 16, lines 1-5, page 16, lines 14-17, page 16, line 24 - page 17, line 3

Claim 33	<u>Description in Translation of Japanese</u> <u>Application No. 268546/1994</u>
33. A lithographic device comprising the following elements which are arranged in that order:	Fig. 4; page 3, lines 6-10, page 10, lines 18-20, page 11, lines 1-8, page 15, lines 17-21
a substrate stage which can be positioned by a first positioning device parallel to a first direction which is perpendicular to a vertical Z-direction and a second direction which is perpendicular to the first direction and to the Z-direction;	Fig. 4; items 19-22, 25-27; page 6, lines 14-20
an imaging system with a main axis directed parallel to the Z-direction;	Fig. 4; item 14; page 5, lines 12-22
a mask stage which can be positioned parallel to the first direction by a second positioning device; and	Figs. 1-4; items 8, 9, 31A, 31B, 39A, 39B, 42A, 42B are parts of a mask stage; page 3, line 17, page 11, lines 4-5, page 11, lines 11-25, page 16, lines 1-5, page 16, lines 14-17

Claim 33	Description in Translation of Japanese Application No. 268546/1994
an illumination optical system which irradiates an exposure illumination light beam;	Fig. 4; items 1-5; page 4, line 21 - page 5, line 10, page 16, lines 20-24
wherein the mask stage is also positionable parallel to the second direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device;	Page 11, lines 11-25, page 16, lines 14-17, page 20, line 16 - page 21, line 4
wherein the second positioning device is provided with a first linear motor by means of which the mask stage can be positioned over comparatively small movement parallel to the first direction and the second direction and can be rotated about the axis of rotation of the mask stage and a second linear motor by means of which the mask stage can be positioned over comparatively great movement parallel to the first direction; and	Items 39A, 39B, 42A, 42B are parts of first linear motor; Items 31A, 31B are parts of second linear motor; Page 16, lines 1-5, page 16, lines 14-17, page 16, line 24 - page 17, line 3
wherein a magnet system and an electric coil system belong to the first linear motor, while the second linear motor comprises a stationary part and a movable part which is displaceable parallel to the first direction over a guide of the stationary part, the magnet system of the first linear motor being connected to the mask stage and the electric coil system of the first linear motor being connected to the movable part of the second linear motor so as to move with the movable part of the second linear motor.	Items 37A, 37B, 40A, 40B are magnets of first linear motor, and are fixed to fine adjustment stage 8; Items 38A, 38B, 41A, 41B are coils of first linear motor, and are fixed to scanning stage 9 to which movable parts 32A, 32B of second linear motor 31A, 31B are fixed; Second linear motor 31A, 31B has movable parts 32A, 32B and stationary parts 33A, 33B; Page 8, lines 7-17, page 15, lines 3-5, page 18, lines 15-25, page 19, lines 4-7, page 19, lines 9-15, page 19, line 20 - page 20, line 9, page 23, lines 16-25

V. Conclusion

In view of the foregoing, Applicant respectfully submits that claims 28-33 are allowable, and that an interference with U.S. Patent No. 5,767,948 should be declared.

Should the Examiner believe anything further would be desirable to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number set forth below.

Respectfully submitted,

Mario A. Costantino Registration No. 33,565

MAC/ccs

Attachments:

Appendix Information Disclosure Statement Translation of Japanese Application No. 1994/268546 Copy of Patent Owner's Comments on European Opposition Petition for Extension of Time

Date: March 17, 2003

OLIFF & BERRIDGE, PLC P.O. Box 19928 Alexandria, Virginia 22320 Telephone: (703) 836-6400 DEPOSIT ACCOUNT USE
AUTHORIZATION
Please grant any extension
necessary for entry;
Charge any fee due to our
Deposit Account No. 15-0461

APPENDIX

Changes to Claims:

Claims 32 and 33 are added.

The following is a marked-up version of the amended claims:

29. (Amended) The lithographic device as claimed in claim 28, A lithographic device comprising the following elements which are supported in that order:

a substrate stage which can be positioned by a first positioning device parallel to a Y-direction which is perpendicular to a vertical Z-direction and an X-direction which is perpendicular to the Y-direction and to the Z-direction;

an imaging system with a main axis directed parallel to the Z-direction;

a mask stage which can be positioned parallel to the Y-direction by a second positioning device; and

an illumination optical system which irradiates an exposure illumination light beam;

wherein the mask stage is also positionable parallel to the X-direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device;

wherein the second positioning device is provided with a first linear motor by
means of which the mask stage can be positioned over comparatively small movement
parallel to the Y-direction and X-direction and can be rotated about the axis of rotation of the
mask stage and a second linear motor by means of which the mask stage can be positioned
over comparatively great movement parallel to the Y-direction; and

wherein a magnet system and an electric coil system belong to the first linear motor, while the second linear motor comprises a stationary part and a movable part which is displaceable parallel to the Y-direction over a guide of the stationary part, the magnet system

of the first linear motor being fastened to the mask stage and the electric coil system of the first linear motor being fastened to the movable part of the second linear motor.

31. (Amended) The lithographic device as claimed in claim 30, A lithographic device comprising the following elements which are supported in that order:

a substrate stage which can be positioned by a first positioning device parallel to a first direction which is perpendicular to a vertical Z-direction and a second direction which is perpendicular to the first direction and to the Z-direction;

an imaging system with a main axis directed parallel to the Z-direction;

a mask stage which can be positioned parallel to the first direction by a second positioning device; and

an illumination optical system which irradiates an exposure illumination light beam;

wherein the mask stage is also positionable parallel to the second direction and rotatable about an axis of rotation which is parallel to the Z-direction by the second positioning device;

wherein the second positioning device is provided with a first linear motor by
means of which the mask stage can be positioned over comparatively small movement
parallel to the first direction and the second direction and can be rotated about the axis of
rotation of the mask stage and a second linear motor by means of which the mask stage can
be positioned over comparatively great movement parallel to the first direction; and

wherein a magnet system and an electric coil system belong to the first linear motor, while the second linear motor comprises a stationary part and a movable part which is displaceable parallel to the first direction over a guide of the stationary part, the magnet system of the first linear motor being fastened to the mask stage and the electric coil system of the first linear motor being fastened to the movable part of the second linear motor.